

Appl No. 09/621,408
Amdt. dated April. 15, 2004
Reply to Office Action mailed February 20th, 2004

Amendments to the Specification:

Please replace line [0028] with the following amended line:

[0028] One of the problems with these prior art thin-film distillation/evaporation units is that an electric heating

Please replace line [0030] with the following amended line:

[0030] potentially explosive environment. Another problem with prior art thin-film distillation/evaporation units is that they

Please replace line [0037] with the following amended line:

[0037] 5,630,912, 6,368,497, and applicants own U.S. Patents Nos. 5,824,211 and 5,776,315. All these

Please replace line [0039] with the following amended line:

[0039] source of the liquid. None of the prior art utilizes the existing [filtration system] liquid filter mounting boss, such as that of a conventional spin-on type oil filter normally used on internal combustion engines, to effect a

Please replace line [0054] with the following amended line:

[0054] and compact, and conveniently fastens to existing liquid filter mounts of the kind in general use, normally such as the spin-on filter boss used in the majority of internal combustion engines.

Please replace lines [0058 - 0060] with the following amended line:

[0058 - 0060] and removing volatile contaminants from liquids. [In one embodiment, the device incorporates a self-contained particle filter (32) for filtering particles from the contaminated liquid.] The liquid purifying device (10) itself comprises a

Please replace line [0061] with the following amended line:

[0061] distillation/evaporation chamber positioned essentially between the [liquid source] existing liquid filter mounting boss (14) and the

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Please replace line [0063] with the following amended line:

[0063] [(20)] (36). (The liquid source and liquid filter are not part of the present invention). The filtered contaminated liquid is passed through the liquid metering orifice (26),

Please replace line [0077] with the following amended line:

[0077] [form] from the normal oil flow through the filter and processed through the liquid purifying

Please replace lines [0083 -0085] with the following amended line:

[0083 -0085] with little or no impedance in overall liquid flow. This allows the liquid purifying device to effectively utilize[s] the existing liquid filter mounting system, which in the present embodiment would utilize the conventional oil filter mounting means such as that employed on internal combustion engines, to facilitate its own mounting [and provide a convenient source of liquid.] while simultaneously providing a convenient source of liquid to the liquid purifying device while not altering the operation of the engine lubricating system.

Please replace line [0126] with the following amended line:

[0126] FIG. 5 is a [vertical] sectional view of a first alternative design of the liquid purifying device.

Please delete lines [0128 - 0151]

Please replace line [0157] with the following amended line:

[0157] 14 Liquid [refiner to liquid source attachment means.] purifier to liquid filter mounting boss.

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Please add line [0157b] (following line 0157) with the following line:

[0157b] 15 Liquid purifier to liquid filter mounting boss means.

Please delete line [0164]

Please replace line [0165] with the following amended line:

[0165] 32 Liquid filter (for illustrative purposes only. Not part of the present invention).

Please replace line [0166] with the following amended line:

[0166] 34 Liquid source (for illustrative purposes only. Not part of the present invention).

Please delete line [0168]

Please replace line [0169] with the following amended line:

[0169] 40 Liquid filter to liquid purifying device attachment means.

Please replace lines [0183 -0193] with the following amended lines:

[0183 -0193] Turning now to the drawings, and initially to Fig. 1, the liquid purifying device is [shown generally] illustrated by the numeral 10. The device includes a [combination] liquid purifying device to liquid [source attachment means (14)] filter mounting boss attachment means (15), filter to liquid purifying device attachment means (40), and liquid communication conduits (12) [and liquid filter (32)]. [Oil from the engine flows through the liquid purifying device through the liquid communication conduits(s) (12) unimpeded to the liquid filter (32), which oil passes through the liquid filter (32) in the customary manner and returns to the engine through additional liquid communication conduit(s) (12) allowing the liquid purifying device to be mounted in-between the engine and the conventional oil filter while retaining the function of the conventional filter with the added capabilities of volatile contaminate removal.] In practice, the liquid source attachment means (15) is a threaded boss such as that commonly used by internal combustion engines for the attachment of oil filters, which attachment means is commonly used and understood by the industry, which threaded boss is now used to attach the device to the internal combustion engine, with the liquid

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filter to liquid purifying device attachment means (40) also being a threaded boss such as that already stated, which attaches the liquid filter to the device, such that the device is now securely mounted between the filter boss and the filter (32), allowing free communication of engine oil between the liquid source (34) and the liquid filter (32) in the customary manner, thereby allowing the liquid purifying device to be mounted in-between the engine and the oil filter while retaining the complete functionality of the oil filter.

Please replace lines [0194] with the following amended lines:

[0194] The liquid refining device (10) [10] includes a liquid oil metering orifice (26) for

Please replace lines [0203 -0204] with the following amended lines:

[0203 -0204] connections. [In a preferred embodiment of the present invention, a three micron particulate filter is used for the filter media in order to optimize the filtration.]

Please replace lines [0210 -0211] with the following amended lines:

[0210 -0211] distillation/evaporation lid (18), which is secured by [distillation/evaporation lid attachment means (38).] methods well known to industry, such as compression, adhesion, threaded, etc. In the preferred embodiment as observed in Fig. 1, the

Please replace lines [0219 -0223] with the following amended lines:

[0219 -0223] equivalent to twice the width of the chamber. [Included in most embodiments of the liquid purifying device and specifically in Fig. 4, there can be seen a liquid diverting obstruction (28) which redirects the oil flow along the length of the distillation/evaporation chamber to the purified oil exit.]

Please replace line [0241] with the following amended line:

[0241] pressure drop[s considerably] (to ambient or atmospheric pressure), due of course, to the

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Please replace line [0268] with the following amended line:

[0268] closed system, the pressure within the closed system, and therefore within the [liquid channel (38)] distillation/evaporation chamber (22) remains essentially constant

Please delete lines [0272 - 0305]

Please replace line [0308] with the following amended line:

[0308] The [fifth] first alternative embodiment of Fig. [15] 5 illustrates the use of a [horizontally] vertically mounted

Please replace line [0311 -0313] with the following amended line:

[0311 -0313] in the lowermost location. [No liquid diverting obstruction (28) is used with this embodiment so as to allow the oil to flow evenly and uniformly down all interior surfaces of this horizontally mounted embodiment.]

Please delete lines [0315 - 0329]